1: Karsten--123 (1916-18) 1935 Jivaro
116, 192, 137, 241 (1928-29)

"The following trees and plants are cultivated by the Jibaros and the Canelos Indians; the names in the Jibaro and in the Quichua language are indicated with Jib. and Qu. respectively:

Manioc (Manihot aipi, Jib. máma or tsanímba, Qu. lúmu) of many different classes, plantain (Jib. pa'ándama, Qu. palánda), batatas (Convolvulus batatas, Jib. ínchi, Qu. kumál), mani or earth-nuts (Jib. nussi, Qu. ínchi), beans (Jib. mika, Qu. poroto (1), sanahoria (Daucus carota, Jib. maya, Qu. sanahoria), maize (Jib. sháya, Qu. sára), mandi (2), (Jib. sángu, Qu. mandi), a kind of sweet potato (a vine), (Jib. kingi, Qu. papa chambo), pumpkin (Jib. yui, Qu. sapallu (3), the chonta palm (Jib. uí, Qu. chunta-rúru), and the sugar cane (Jib. pa'ata, Qu. huiru).

The Indians also cultivate the Capsicum or Indian pepper (Jib. hímya, Qu. uchu), the naranhilla (Solanum quitense, called narangi in both languages), and the tomato which the Jibaros call kukuchi.

The gourd tree (Jib. tsáppa, Qu. pilchi) is also cultivated, but only because of the dishes and water-bottles which are prepared from its large fruit, and which the Indians use in their daily life."

"1. Spanish poroto.
2. A plant producing a fruit similar to the manioc.
3. Spanish zapallo."

I: Karsten--123-125 (1916-18) 1935 Jivaro-1
116, 137, 824, 241 (1928-29)

"Of the numerous cultivated plants which play a part in the magical medicine and the religious customs of the Indians the following deserve to be mentioned:--

First of all we have the tobacco plant (Nicotiana undulata, Jib. tsańgu, Qu. tabacu) used partly as magical medicine, partly as a narcotic. [124]

The two other principal narcotic drinks of the Jibaros and the Canelos Indians are prepared from the vine Banisteria caapi (Jib. nateḿa, Qu. aya huaśca), and from the bush Datura arborea (Jib. maikoa, Qu. huańtuc). Both are cultivated by the Indians.

How the tobacco, the nateḿa, and the maikoa are used, will appear from descriptions given later on.

Varvasco is a common name for certain poisonous plants which play an important part in Indian fishing. They will again be dealt with in the chapter on the Indian fishing practices.

Tsinsímba is the name of a small fragrant plant, cultivated by the Jibaros, to which a magical power is attributed. The leaves of the plant are chewed and mixed with saliva (in the same way as the leaves of the tobacco), and given to the women and children at certain feasts to make them strong and active.

There is another similar plant, cultivated by the Jibaros, which is called chikí. The root of the plant is warmed up in a clay pot half-filled with water, together with some leaves of tobacco, and the drink is given to a woman at the 'feast of the women'. This

drink has the effect of a vomitory and is supposed to purify the stomach of the woman.

Among the magical plants cultivated by the Jibaros and Canelos Indians must also be reckoned the roucou shrub (Bixa orellana; Jib. ipyaku, Qu. manduru), the fruit of which affords the red dye which the Indians use for painting the face and the body.

Of the plants mentioned above, the following are regarded as 'women', that is, as being animated by a female wakani (aya): the manioc, the camote, the sanahoria, the bean, the earth-nut, the sweet potato, the mandi, the pumpkin, the gourd tree, the tsinsimba, the chiki, and the roucou shrub; whereas the following are regarded as 'men', that is, as animated by a male wakani or aya: the plantain, the maize, the chonta palm, and the narcotic plants tobacco, Banisteria caapi, and Datura arborea, as well as the varvasco.

Consistently with this idea we find, as a matter of fact, among the names of the Jibaro women such names as Mama (manioc), Inchi (camote), Nussi (earth-nut), Ipyaku (roucou) and Chiki; whereas among names of the Jibaro men we meet such as Paandama (plantain), Ui (chonta palm), and Maikoa.

As pointed out before, it is essential that the female plants be cultivated by the women, and the male plants by the men. In any kind of agriculture, however, the rough work, that is, the felling of the trees and [125] the clearing of the ground, when new plantations are made in the forest, is done by the men. On the other hand, although for instance the

plantain is always planted by the men, yet the women later on take part in tending the tree and sing incantations to promote its growth. Just as the earth-deity of the Jibaros is regarded as a woman, so the women are always supposed to exert a special, mysterious influence upon the growth of the crops."

"1. Varváscu. This name includes two or three different plants which are also used in fishing, the fish being stupefied with the poisonous juice squeezed from the root. The plant used for the arrow-poison is probably Cracca toxicaria, a small, leguminous bush containing an alcaloid called rotidona. In order to get the juice, the root is crushed with a club and boiled for a while in a special pot; when the poison is extracted, the roots are taken out, leaving the liquid.

2. Hámbi lállu is a bush, growing wild; its poisonous properties are obtained as follows:--a piece of the stem is cut off, the bark removed and thrown away, the wood substance crushed and boiled for some hours. [147]

3. Pála huásca is a big flat liana, about 12 to 15 cm. in breadth, which creeps up the giant trees of the virgin forest. Because of its flatness it is called 'the shovel-liana' (pala ='shovel'). A piece of the stem is cut off, crushed with stones and boiled for some two hours in a special pot.

4. Cáñu huásca, a liana of about the same size as the pála huásca. Along the middle of this liana there runs a deep channel from which it takes its name (cáñu ='channel'). Cáñu huásca is prepared in the same way as the pála huásca.

5. Payángshi is a big yellow liana creeping under the earth. A small sprout protruding from the earth indicates its presence. It is prepared in the same way as the lianas already mentioned, a piece of the stem being cut off, crushed and boiled.

6. Ilúchi is a small shrub. There are two species of it, differing in size, the larger being called hátun ilúchi (1) about 1 1/2 m. long, the smaller one, uchílla ilúchi, about 1/2 to 1 m. long. The root of both these shrubs is used; the bark is useless, and is therefore scraped off and thrown away; the yellow substance under it is taken out and boiled for a while.

7. Tunísh pa huásca (tunísh pa = 'mixed') is a shrub which is so called from its resemblance to the shrub ilúchi. When it is used for arrow-poison the bark is scraped from the stem and boiled.

8. Apa huásca (ápa = 'old', 'ancient') is a big liana prepared in the same way as the pala and the cañu huasca.

9. Cüílin huásca (cüílin = a bird of the tucan family) is a small liana, about 3 to 4 cm. in diameter and is prepared in the same way as ápa huasca and the other lianas.

10. Hámbi huásca is a long thick liana creeping up the biggest trees of the virgin forest. At the top it is thicker than at the lower end, and the thick parts of the stem are especially used. A number of small pieces are cut off by two Indians, so many that they are quite a burden. These pieces are prepared in the usual way, i. e. crushed

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"1. hatun = 'big', uchilla = 'small'."

with clubs and boiled for a while in a small pot. The woody pieces are then taken out leaving the liquid.

11. Lispúngu múyu. Lispúngu is the name of a tall, thick tree of the forest with fruit about the size of that of the gourd tree. The fruit is cut up, the small seeds taken out, ground, and boiled separately in a special pot. Then the liquid is strained through a piece of linen and the essence carefully pressed out. [148]

12. Hámbi múyu. Of this plant there are three species, of which two are used for the arrow-poison. The one is a tree called hátun hámbi múyu the other is a shrub called uchilla hámbi múyu: of both the red and comparatively small fruit is used. In preparing the hátun hámbi múyu, the fruit is cut open, its seeds taken out and ground. A considerable quantity, say a small wooden basin full, of these ground seeds is boiled in a special pot, then it is strained and the essence, which is white, pressed out just as in the case of the lispúngu múyu.

In using the uchílla hámbi múyu the small red fruit is cut open and the seeds taken out and ground.

13. Tarapútu cara is a vine the leaves of which are similar to those of the tarapoto palm. There are several varieties of this vine and all of them are used in preparing the arrow-poison. The black bark is scraped off the vine with a knife until the desired quantity has been obtained; this is then boiled.

14. Cicuánga caspi, 'the tucan tree' (cicuánga = 'tucan') is a beautiful high tree. A certain quantity of the bark is scraped off and boiled.

15. Hámbi cára cáspi. A small shrub. The rind is scraped off and prepared exactly in the same way as the Cicuánga cáspi.

16. Yána hámbi cáspi. A small shrub. The root of it is used, being crushed with a club and boiled, just as was done with the rind of the hámbi cára cáspi and other shrubs.

17. Chilíca cáspi. A big tree. The bark is scraped off and prepared in the same way as the previous ones.

18. Chíhun cáspi. A shrub. The root is cut into small pieces and boiled for about half a day in a special pot until its poisonous juice is set free, in the form of a concentrate.

19. Ahuiríngri caspi. The ginger shrub (Zingiber officinale?). The root is cleaned and boiled for about two hours.

20. Hámbi pahuága. A big tree. The thick bark is detached from the stem, crushed with stones and boiled.

21. Mándi. There are two species of this plant. The one is small with edible fruit and leaves, and cultivated by the Canelos Indians for its nutritive value. The other one is

bigger and poisonous and only used in the preparation of the arrow-poison. The rind of the stem is taken, carefully cleaned, and then boiled.

22. Pála pánga rúya. A small shrub of which the root is used. Up to ten roots are taken, the small fibres separated and boiled in a special [149] pot on a slow fire for a long time--nearly two days; a concentrated poisonous liquid results.

23. Huaránga quihua. A small plant of which the root is boiled.

24. Hámbi útchu, Indian pepper (Capsicum). The Indians cultivate different species of Capsicum. The one called hámbi útchu is small, yellow in colour, and so strong that it cannot be used as spice. It is exclusively used in preparing the arrow-poison. The whole fruit is boiled for a while and then mashed.

25. Matíri útchu, another kind of Capsicum. This is bigger than the hámbi útchu, red in colour, and also used as spice. When it is used for the preparation of the arrow-poison the seeds are taken out, mashed, and boiled in a little water.

Of these liquids and mashes nearly all, after being boiled separately, are placed together in a large pot for further boiling.

The exceptions are:--

No. 10. Hámbi huásca--the liquid obtained is evaporated over a little fire until only a small concentrate is left, and this is dropped into the large pot, a little at a time.

No. 12. 2nd species--uchílla hámbi múyu--of which the ground seeds are placed in

the large pot without being boiled first.

After thus learning the different plants which yield the ingredients necessary for the arrow-poison, we must examine somewhat more closely how the poison is prepared and what ideas the Indians associate with it."

l: Karsten--153 (1916-18) 1935 Jivaro
192, 137 (1928-29)

"1. Yarrier, one of the biggest lianas of the virgin forest (probably identical with the tarapútu cara of the Canelos Indians). A certain quantity of the rind is scraped off with a knife and boiled in a pot with other poisonous ingredients.

2. Yariráhua; 3. Tsaueimera; 4. Papúra; 5. Nupáma; 6. Machápi; are all thick lianas of about the same size as the Yarrier just mentioned. They are all prepared in the same way, a quantity of the bark being scraped off and boiled with the poisonous ingredients obtained from the other plants.

7. Páingis is a smaller liana about 2 to 3 cm. in diameter. It is prepared in the same way as the other lianas.

8. Eimera is a small wild shrub. The Jibaros use the root of it, scraping off some of the rind which covers it, and then preparing it in the same way as the rinds obtained from other plants.

9. Yeistseásа (seásа ='poison') is another small shrub with poisonous properties. A quantity of the rind is detached from the stem and beaten with stones. The juice is thus pressed out and then boiled.

10. Tachira is likewise a shrub. The rind is scraped from the stem and boiled with the rest of the poisons."

1: Karsten--155-156 (1916-18) 1935 Jivaro
137 (1928-29)

"1. Seása kunápi. Kunápi (in Quichua tzigta), a shrub of which there are various species. Some of them are only slightly poisonous and are used by the Indians as ordinary medicines. A certain quantity of the rind is scraped off and boiled in water, the decoction being taken as a remedy for catarrh, head-ache, and other ailments. The species which the Jibaros call seása kunápi is more poisonous than the others and is exclusively used for improving the arrow-poison. The rind of the shrub is boiled and the poisonous liquid extracted, just as is customary in regard to other plants used in the preparation of the poison. [156]

2. Ambi (in Quichua pucúna útchu), Indian pepper (Capsicum) of the particularly strong and poisonous variety which the Canelos Indians also use as an ingredient for the arrow-poison."

"The most interesting of these narcotics is no doubt the one which is called natéma by the Jibaros and aya huasca by the Quichua-speaking Indians. This is a poisonous vine, --containing an alcaloid, like the maicoa--the scientific name of which, according to the English botanist R. Spruce, is Banisteria caapi(1), of the family Malpighiaceae. The same traveller states that the plant also grows on the Rio Içanna, on the Uaupés and its affluents in north-west Brazil, as well as on the cataracts of the Orinoco, being used everywhere by the natives in the same way, for magical and divination purposes (2). In Ecuador the liana is best known under its Quichua name aya huasca ('the vine

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"1. In Eastern Ecuador there seem to occur different species of the Banisteria. At any rate the Canelos Indians told me that they use three kinds of aya huasca which they distinguish as the puma aya huasca, the ahuiringri aya huasca, and the tunchi aya huasca. The last-mentioned is particularly used by the medicine-men (tunchi = the magical arrow).

2. R. Spruce, Notes of a Botanist on the Amazon and the Andes. London, 1908, II. 414 sqq., 423."

of the souls')(3); it is thus [433] called for instance by the Indians of the Napo, Curaray, Bobonaza, and Pastaza. The Jibaros call both the vine itself and the narcotic prepared from it natéma. The Secoyas on the Rio Aguarico and the savage Avishiris between Napo and Curaray also know the use of the plant. Similarly, the primitive Colorados and Cayapas in western Ecuador cultivate the aya huasca, using it as a magical medicine and for divination."

"3. On the Napo I was assured that the natives call the vine in question haya huasca ('the bitter vine'), which answers to the fact that the drink prepared from it is exceedingly bitter in taste. On the other hand, at Canelos the form aya huasca seems to be the most common, and this name ('the vine of the souls') well accords with the ideas the Indians have about its power of summoning the souls or spirits of the dead."

1: Karsten--438 (1916-18) 1935 Jivaro
137 (1928-29)

"Equal in importance to the natéma (aya huasca) and still stronger in its effects is the narcotic which is called maíkoa (maikoma) by the Jibaros and huántuc by the Canelos Indians. It is prepared from a shrub, the scientific name of which is Datura arborea of the family Solanaceae. Its poisonous properties may be compared with those of beladonna or opium, and even seem to surpass them. Insensibility, hallucinations, and even temporary madness seem to be the regular effects produced by this narcotic drug. The species Datura in Ecuador grows both in the tropical virgin forests and in the sub-tropical mountain regions, but there are at least two sub-species of it, D. arborea and D. stramonium. The beautiful bell-shaped flowers of the former sub-species are larger and nearly white in colour; of the latter smaller and of yellow-red colour. Both of them are equally poisonous. The half-civilized Indians of the Sierra, when they want to harm their enemies, practise nefarious magic by means of the flowers of the D. stramonium. It is the other sub-species which is used by the Indians of Eastern Ecuador. The beautiful shrub is everywhere specially cultivated, and is usually found among other garden plants outside the houses."

4: Up de Graff--257 (1897) 1923 Jivaro
116, 137

"It may be worth mentioning that it was here that I discovered for myself, with no previous knowledge on the subject, that those beautiful coffee coloured seeds which are picked up both on the Atlantic and on the Pacific shores of the two Americas, and are known as sea-beans, grow in huge quantities along the banks of the Upper Amazon and its tributaries. They grow in a pod like peas on a plant and when seeding time comes round large numbers of them fall into the water and begin their journey of several thousand miles. They are, of course, treasured by many people as a gift from the sea, which, strictly speaking, they are not. Doubtless they abound on the banks of many other tropical rivers. We put them to no practical use, but it was at least amusing to find 'sea-beans' over three thousand miles from the sea by the course they have to follow."

4: Up de Graff--257-258 (1897) 1923 Jivaro
116, 137

"Many a time, on that journey up the Santiago, exploring the vicinity of our camp, while the Indians were out with their blow-guns after game, we came across fine vanilla plants. These plants grow there in profusion, clinging to every kind of tree. The pods are twelve inches in length, being fatter and more fragrant than the ordinary commercial article. Their flower is like a small orchid, to which family they belong. The dark humid forests of the Amazon produce enormous numbers of beautiful specimens of every member of this same family, from the huge scarlet bell-shaped variety of the plant which weighs upwards to [258] a hundred pounds to the tiny purple specimens, somewhat like a violet in form, which cling in great masses to the roots of the trees and vines. Curiously enough, I was never able to find one that gave off a pleasant scent, though many times did I come across beautiful blooms with disagreeable odours. For the orchid collector, this would indeed be a wonderful hunting ground."

5: Reyes and Teran--93-100 (No date) 1939 Jivaro-1
116, 137

"In regard to the flora, it would be difficult to find in any part of the earth a more dense and abundant vegetation. However, not all of the area which the Ecuadorians call the Oriente has identical vegetation. If one descends from the páramos [high cold regions] of the eastern cordillera toward the Amazon region, between the elevations of 3,200 and 1,600 meters, approximately, one finds an intermediate or mixed zone of wooden slopes [Vertientes boscosas] very similar to [94] the western coastal plain. This zone has the identical subtropical flora and fauna, although naturally, the wooded slopes have a thicker growth, a more rugged character, and an extent vastly greater than those of the Pacific zone.

The most distinctive feature of the flora of the eastern Andean slopes probably is the ishpingo or cinnamon tree (Nectandra cinnamomoides), in search of which the first white man, Gonzalo Pizarro, went into the interior from Quito. (1541). Thus he opened the route which was to lead one of his companions to discover the Amazon. From this tree, part of our [GCB: Ecuadorian] Oriente takes the name of Canelos or country of the Canela.

According to Gonzalez Suarez, 'these trees are as tall as olive trees; their blossoms open like buds [capullos] in which is the substance which in fragrance and taste is very similar to cinnamon. The best and most fragrant [95] fruit is generally that of the trees which are cultivated in orchards such as the Indians of Quijos had before the

Conquest. They used it as a kind of money in the transactions they used to have with the other towns of the province of Quito in the time of the Incas. Atahualpa, in Cajamarca, sent Pizarro several bunches of these fragrant flowers.

In this same zone, particularly toward the South, are found the best chinchonas [GCB: Peruvian bark trees] of the few which still remain in Ecuador, including among them the most valuable ones in the world. This famous tree, more commonly known by the name of cascarilla or quina, constituted a great source of wealth our country [GCB: Ecuador] prior to the time when the English and Dutch established their celebrated plantations in India and in some of the Sunda Islands, respectively, taking the first specimens from the [GCB: Ecuadorian] Lojanos woods. [96]

In the region of Mendez is found the alcanfor [GCB: camphor tree] whose resin frightens away the most terrible enemy of wooden constructions--the comején [wood-borer].

The Caucho [GCB: rubber tree] (ficus elastica) is found growing wild. Its exploitation attracted in particular an enormous number of adventurous Colombians and Peruvians. These people, besides devastating this valuable tree, were the cause of the most serious conflicts between the nations disputing the dominion of the forest. When the product of this tree was quoted at high prices [GCB: in the world rubber market] the customhouse at Iquitos took in as much revenue as that of Guayaquil.

The Tagua [GCB: ivory nut tree] (phitelepa macrocarpa) which is so successfully grown on the coast, is not made use of here [GCB: in the interior] in spite of its abundance. From Julapas to the Arapicos river, in the Macas region, there is a huge stand estimated to total almost one hundred million hectares. [97]

The zarzaparilla [GCB: sarsaparilla] (Smilase obliguata ruisiana) is a climbing vine which grows wild. Its exploitation [GCB: in the Ecuadorian Oriente] has started an active trade with Brazil, the United States and Europe in medicinal products.

The Copal [GCB: tree yielding a transparent resin] (Himenea courbail verrucona) is a tree whose resin is used for illumination.

The Cacao [GCB: chocolate tree] (Teobroma cacao) is found abundantly in the wild state. Its presence suggests that the cultivation of domestic varieties would be both easy and profitable.

The Vainilla [GCB: vanilla plant] is an aromatic plant which grows best in the basin of the Upano river. Its exploitation, like that of the caucho [GCB: rubber tree], has been so foolishly and irrationally conducted that the search for it is becoming daily more difficult.

The barbasco (Jacquinia armillaris tac) is a shrub whose poisonous root [98] is made use of to fish by poisoning the waters. The immoderate use of this practice is likely to have disastrous consequences for the breeding of fish in the rivers of the Oriente.

The natema, climbing vine of the passifloraceous family, is a powerful narcotic. An infusion from its stem frequently is used by the Jívaro to treat sickness or to obtain prophetic dreams.

Precious woods, valued for their texture as well as for their beautiful coloration and agreeable odor, are innumerable. But those most exploited are cedar, ebony, mahogany, oak, lignum-vitae [guayacan] etc. (1)

The plants briefly cited above are only those which have been the object of primitive exploitation. In few regions [GCB: of the world] can the botanist and the naturalist [99] find a more vast and extensive field for his studies, as the varieties of vegetation are infinite.

Below the altitude of 500 meters, is the domain of the humid tropical forest, although it would be an error to suppose that it occupied all the land under this height. For while the forest predominates, it nevertheless is frequently interrupted, and alternates with thickets of perennial and stiff foliaceous plants, and with clumps of trees and brambles.

This humid tropical forest is poor in low-growing ligneous plants. For here the

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"1. Data from 'Album-guia de la Region Oriental Ecuatoriana' por Alfonso Rumazo González."

light reaches the ground with difficulty; the earth is covered with dead leaves, mossy sod, and shady plants such as ferns, whose perpetual growth and decomposition through heat and humidity constitute the best fertilizers for arboreal species. Above this zone, which we may call the lower plane of the forest rise the palms of middle height, and above these, the tall giants of the forest, with [100] high crowns, whose branches have no leaves except at great heights.

Lianas and epiphytes [GCB: varieties of vines] are also an essential part of the tropical forest. Of these, there are two classes; the low, which is nourished by the dampness, and the high, which entwines itself around the treetops."

18: Hermessen--444-445 (No date) 1917 Jivaro
116, 137, 276

"Although wild cacao trees (Theobroma cacao) were abundant on the Zamora, the Jíbaros did not appear to have any practical knowledge of the alimentary value of the fruit, for there were many trees to be seen along the river with pods rotted on them. Rubber trees (probably Sapium verum, Hemsl.) were also common enough, and the latex, obtained in the [445] usual way by making incisions in the trunk, was utilized in various native articles."

26: Brüning--66 [3] (1902) 1928 Jívaro
116, 262, 252, 137

There is a great variety of wild-growing edible plants, and it would be of great help to the traveller in the primeval forests of the upper Marañón if he would know these plants, for he is frequently forced by circumstances to make use of the prevailing flora. With what keen appetite have we not often devoured some inconspicuous fruit which the Indians designated as edible! Hunger is always one of the most formidable enemies for travellers in this region of the globe. During my short stay with the Aguaruna Indians I learned to know as edible the tender shoots of two palm trees. The names of these palms were tuntuám and uyáy. In order to reach this food one has to cut the entire tree (which brought anguish to my soul, but hunger is all powerful). These shoots are eaten raw or cooked in water. If you cook the shoots, you may drink the water as soup. The taste was similar to that of white cabbage.

26: Brüning--66-67 (1902) 1928 Jívaro
116, 262, 137

I have eaten the following wild-growing fruits (or I have watched others eating them): the nut [67] of the ivory-palm before it was fully matured. The Indians calle it tĭapi, the whites tagua. The fruit of a passion-flower, called antĭímuntŭe: It tastes well, similar to our goose-berry. Furthermore, the fruit na(h) ahálp which has the size of a small orange and the yellow color of an orange; its skin, however, has greater thickness and firmness. Its stone is so big that there is little space left for the sweet watery meat. We found this fruit at the eastern foot of the mountain, a little above Nazaret on the Marañón. Along the Marañón tributaries we found a fruit which is called pacáy in the Quichua language and huava along the north coast of Peru. Along the Marañón, however, these fruits can be found not on large trees but on low shrubs. Moreover, the pod was at the most 10 cm. long, while along the coast it had a length up to 50 cm. Otherwise the two fruits seemed to me the same. The Indians call this fruit which grows in their territory wámbokiš. It consists of a dark-green, leatherlike pod in which there are the black beanlike seeds bedded in a white, cottonlike, sweet mass. The white mass is the edible part. The aforementioned are according to my information, the articles of food provided by the primeval forest. But there are certainly more.

34:Harner E-4, 5 (1956-1969)1973 SD9 Jivaro SD9

133 1. View of the middle Río Upano north of Huambi,
• 137 looking eastward (1956–57).

34:Harner E-4, 5 (1956-1969)1973 SD9 Jivaro SD9

2. Side view of a Jivaro house and its surrounding garden (upper Rio Yaupips region, 1956-57).

• 137
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/p. 90-1/

14:Harner E-4, 5 (1956-1969)1973 SD9 Jivaro SD9

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16. The saline spring from which almost all of the salt used by the interior Jivaro is obtained. Those living within a day or two of the spring boil the water in pots and trade the resultant salt to more distant neighborhoods (near the upper Río Morgonaza in the eastern Cordillera de Cutucú, 1956-57).

/p. 139-8/

34:Harner E-4, 9 (1956-1969)1973 SD9 Jivaro SD9

178 have made possible by the development of trade with the
184 Achuara, who are the main regional producers of blowgum
298 and curare. Formerly, blowgum and curare could only be
411 obtained in small quantities by looting Achuara houses after
438 a successful head-hunting raid.

[219] In the case of fishing, no noticeable trends have occurred
178 except for a very minor increase in the use of hook-and-line
227 technique due to the acquisition of some steel fish hooks by
438 means of the inter-tribal trade network.

Wild food gathering has been marked by a decline in the
178 collection of the formerly important chonta palm fruit. This
222 decline in collection, interestingly enough, is attributed to
• 137 the introduction of the steel machete, whose efficiency, compared to the stone axe, made it easy for men to chop down chonta palms simply for their edible tips, thereby reducing the number of trees available as regular sources of the hanging clusters of fruit. In other words, the introduction of steel cutting tools, by contributing to the degradation of this wild food resource, decreased rather than increased food obtained from gathering.

178 Species of domesticated plants remain unchanged except
24 for two new additions, *papa china* and the onion, introduced by means of trading partners from the frontier Jivaro, who in turn had adopted them from the missionaries and Ecuadorian settlers. None of the aboriginal native crops has been abandoned within the memory of the informants.

[462] The sexual division of labor in agricultural activities is unchanged except for the relatively inconsequential harvesting of the small plantings of red pepper and sugar cane. Formerly, both sexes engaged in harvesting these, whereas now only women do. The decline of male interest in harvesting sugar
178 cane seems to be due to the fact that since the adoption of
298 firearms, blowgun and poisoned darts are rarely used any
411
814